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ABSTRACT

This research discusses the probability of child witnesses providing a complete and accurate description of an event. Children have been regarded as particularly inaccurate, highly suggestible, and basically unreliable in court cases. Psychologists have concluded that younger children are much more suggestible than older children or adults, and a devious lawyer could, if he so desired, control the testimony of a child by means of suggestion. This research investigated one method of "creating an idea of what the child is to see," namely, that of varying the wording of the questions used to interrogate the child about some event he has recently witnessed. Although very young children may be highly suggestible, this research attempts to determine whether preschoolers are indeed influenced by the subtle changes in the form of the questions. Thirty-two children, ranging in age from 4;0 to 4;6, were shown four films. The children were interviewed individually with questions on the films combining the following variables: affirmation-negation ("Did you see...?" vs. "Didn't you see...?"); presence/absence (for each film, four entities or events actually occurring were selected, and four plausible entities or events which did not occur were generated); and either the article variable ("the" vs. "a" for singular entities) or the quantifier variable ("some" vs. "any" for plural or mass noun entities). It was found that if the question concerned an entity that was present in the film, the form of the question did not matter. If, however, the question concerned an entity that was not present in the film, the form of the question significantly affected the probability of a "yes" response. (Author/NCR)

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THE INFLUENCE OF THE FORM OF THE QUESTION ON THE EYEWITNESS TESTIMONY OF PRESCHOOL CHILDREN[1]

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A question of interest to psychologists, lawyers, police investigators, and others is how, when a person has witnessed some unusual event, complete and accurate information may be obtained from that witness. A witness to a brief event, such as a crime, is likely to provide a description of that event which is neither very complete nor very accurate.

The present research focusses on the specific case in which the witness is a child. The child has always been regarded as particularly inaccurate, highly suggestible, and basically unreliable. Much research on the psychology of testimony, including that of children, was conducted in Europe prior to World War I. In the first of a series of annual reviews, Whipple (1909) stated "the one factor that more than any other is responsible for the poor reports of children is their excessive suggestibility, especially in the years before puberty." (p. 162). Perhaps the most dramatic piece of evidence is the work of Varendonck (1911, reviewed by Whipple, 1913). Varendonck was one of the first psychologists to be used in the courtroom as an expert witness on testimony. The case occurred in Belgium in 1910, where Varendonck was asked to evaluate the information obtained from two young girls under suggestive questioning in a preliminary examination. He devised a series of ingenious experiments incorporating questions similar to those which had been asked of the two young witnesses. The responses obtained from children of the same age as the two witnesses demonstrated to Varendonck's satisfaction that the original testimony could have resulted from the suggestive questions. For example, when 18 7-year old students were asked to report on the color of the beard of one of the teachers in their building, 16 answered "black", and 2 did not answer. In fact, the teacher did not even have a beard. When 20 8-year-olds were asked the same question, 19 reported a color; only one correctly said the man had no beard. In another experiment, a teacher visited a class, stood before the students for five minutes while talking to them, and kept his hat on. Immediately after he had left the room, the teacher of the class asked: "In which hand did Mr. _____ hold his hat?" Seventeen claimed it was the right hand, 7 said the left hand, and only 3 gave the correct answer. Results like these convinced Whipple that "children are the most dangerous of all witnesses" (1911, p. 308).

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[1] The assistance of Martha Harmanian in administering the experimental procedure is gratefully acknowledged.

Other social scientists shared Whipple's view. Lipmann (1911), for example, concluded that "younger children prove to be very much more suggestible than older children or adults." (p. 258). Whipple summarized Lipmann's interpretation of the unreliability of children's reports:

> First, the child does not distribute his attention in the same way as the adult. . . secondly, the child is uncritical in filling out gaps in his memory and uses freely material supplied through custom, through his own imagination, or through suggestion. (1912, p. 265)

In his textbook Psychology for the Lawyer, McCarty (1929) reported that "There is a very common impression that children are more suggestible than adults" (p. 270), and went on to suggest that a devious lawyer could, if he so desired, control the testimony of a child by means of suggestion, and could elicit from the child evidence that is wholly false and unreliable.

More recently, Rouke (1957) reviewed the extensive literature on the ability of witnesses to recall material from either pictures or actual events and concluded that "children were in every respect poorer than adults" (p. 52). In sum, it appears to be a strong belief that one can "create, if you will, an idea of what the child is to hear or see, and the child is very likely to hear or see what you desire" (Brown, 1926, p. 133).

The research reported here investigated one method of "creating an idea of what the child is to see", namely, that of varying the wording of the questions used to interrogate the child about some event he has recently witnessed. There is ample evidence demonstrating that the wording of a question posed to an adult can influence the answer to that question (e.g., Muscio, 1915, Loftus & Zanni, 1973; Loftus & Palmer, 1974). For example, in experiments conducted by Loftus and Palmer, subjects were shown films of automobile accidents and then asked questions about events occurring in the films. The question "About how fast were the cars going when they smashed into each other?" elicited higher estimates of speed than "About how fast were the cars going when they hit each other?" indicating that changes in a single word in a question can markedly and systematically affect a witness's answer to that question. Loftus and Zanni found that, relative to questions containing an indefinite article, those with a definite article (e.g., Did you see the broken headlight) produced more "recognition" of events that in fact never occurred. The Loftus and Zanni result is in agreement with the work of Muscio (1915); among other conclusions, Muscio claimed that the most reliable form of question was one that did not use the definite article and did not use a negative term. Thus "Did you see a . . .?" was found to be less suggestive than "Did you see the . . .?" or "Didn't you see a . . .?"

Other aspects of language may also be used to convey a stronger expectation of a positive response than the corresponding affirmative sentence (Bolinger, 1957; Livant, Note 1). Examples are quantifiers,

such as some and any which alternate in declaratives and negatives: "I want some supper", but "I don't want any supper". According to Bolinger (1960) and Livant, any is also the preferred form for questions, but some is frequent in questions, and appears to convey a different expectation, though it is difficult to be precise about this. Compare "did you see some bears?" with "Did you see any bears?" Some and any are used with plural count nouns and mass nouns, whereas the and a may be used with singular count nouns.

Although very young children may be highly suggestible, it is not clear that their relatively short experience with the language about them is sufficient for them to learn the force of these subtle changes in language. The present research attempted to determine whether preschoolers are indeed influenced by the form of questions.

Method

Subjects. Thirty-two children, ranging in age from 4;0 to 4;6, were tested. They were drawn from suburban, middle class preschool and kindergarten facilities.

Films. Four films, approximately one minute long each, were shown to the children. They were selected for their appeal to children from the collection of commercials of the Department of Speech at the University of Washington. The films were shown in the following order:

(1) A Pepsi commercial showing people engaged in various recreational and social activities;

(2) A religious film showing a boy trying to get the attention of his parents;

(3) A cartoon advising people on safety measures regarding Christmas trees; and

(4) A forest fire prevention message showing many animals of the forest.

Design and Procedure. The children were interviewed individually. Eight questions followed each film for a total of 32. There were 16 question forms, so that each child answered 2 questions of each form. The 16 forms were generated by combining the following variables: affirmation-negation ("Did you see . . .?" vs. "Didn't you see . . .?"); presence/absence (for each film, four entities or events actually occurring were selected, and four plausible entities or events which did not occur were generated); and either the article variable (the vs. a for singular entities) or the quantifier variable (some vs. any for plural or mass noun entities). Question form and the entity or event questioned were counterbalanced across subjects. That is, each event was questioned equally often in each possible form for that event; each child was asked questions in all forms. Below is a sample set of questions for one film (the Pepsi commercial);

1)	Did you see the little girl?	(Affirmative, the, present)
2)	Did you see a bridge?	(Affirmative, a, present)
3)	Did you see any planes?	(Affirmative, any, absent)
4)	Didn't you see the elephant?	(Negative, the, absent)
5)	Didn't you see some orange juice?	(Negative, some, absent)
6)	Didn't you see a man fall?	(Negative, a, absent)
7)	Did you see some flowers?	(Affirmative, some, present)
8)	Didn't you see any watermelon?	(Negative, any, present)

About ten minutes after the last film, half the children were asked to tell the experimenter everything that they remembered. This free recall was included to assess any longer-term effect of question form on memory. If no information was volunteered, a single prompt of the form "Do you remember a fire?" was offered.

Results

For purposes of analysis, the sixteen question types were divided into four groups of four each: questions about present, singular events; questions about present, quantified events; questions about absent, singular events; and questions about absent, quantified events. This division is appropriate because within each category, events are completely counterbalanced with question type; that is, each event is questioned in each form. Tables 1 to 4 present the mean probability of a Yes response to each question type.

Four within-subjects analyses of variance were performed, each of the general form Polarity x Article or Polarity x Quantifier. For the data of Tables 1 and 2, no significant effects were observed (all Fs below 2.6, df = 1, 31).

For the data of Table 3, a significant effect was found for the article variable ($F = 11.4$, $p < .01$), and a marginally significant interaction of polarity with article ($F = 4.1$, $p < .06$). Duncan's Multiple-Range tests revealed that questions of the form "Did you see the . . .?" were answered yes significantly more often than all other types of questions ($p < .05$).

For the data of Table 4, a significant interaction of polarity with quantifier was observed ($F = 5.0$, $p < .05$). Questions of the form "Did you see any . . .?" and "Didn't you see some . . .?" were answered yes more often than the other two forms, though this fell just short of significance by the Duncan's test.

Of particular interest in the free recall data are items "recalled" which were not in the films, but which were asked about in questions. Only four such items occurred, each from a different child, and each for a different question form. (1) Subject was asked, "Did you see a boat?"; later recalled " . . . some boats in the water." (2) Subject was asked, "Didn't you see a bear?"; later recalled "I remember a bear." (3) Subject was asked, "Didn't you see some bees?"; later recalled " . . . a bee in it." (4) Subject was asked, "Did you see some candles start the fire?"; later recalled "the candle maked the fire."

Table 1

Probabilities of a Yes response to questions about present, singular events.

		Article	
		A	The
Polarity	Did	79	87
	Didn't	90	85

Table 2

Probabilities of a Yes response to questions about present, quantified events.

		Quantifier	
		Some	Any
Polarity	Did	79	79
	Didn't	88	73

Table 3

Probabilities of a Yes response to questions about absent, singular events.

		Article	
		A	The
Polarity	Did	22	56
	Didn't	27	33

Table 4

Probabilities of a Yes response to questions about absent, quantified events.

		Quantifier	
		Some	Any
Polarity	Did	22	35
	Didn't	34	27

Discussion

These results can be summarized very briefly: If the question asked about an entity which was indeed present in the film, the form of the question did not matter. With probability 73-90%, the children responded yes. This does not appear to be a simple ceiling effect, as the children are not responding with 100% accuracy.

If, however, the question asked about an entity which was not present in the film, the form of the question significantly affected the probability of a yes response. In particular, questions of the form "did you see the . . . ", "did you see any . . .", and "didn't you see some . . ." were more likely to be answered yes than other question types. These three particularly effective yes-eliciting questions were among the forms hypothesized, although others hypothesized, such as "didn't you see the . . .", and "didn't you see any . . .", were not effective.

It is important to realize that these results depend on the joint validity of two hypotheses: first, that children are "suggestible", and second, that children are aware of the expectation conveyed by certain linguistic forms such as the. The expectation is not directly conveyed, as it would be in "I saw the car, did you?" The expectation is implicit in the article. Thus, one finding of this study is that under certain conditions, children are aware of the additional meaning conveyed by the definite article. Interestingly, it is not until sometime between the ages of four and five that the full literal meaning of the definite article (specificity of reference to listener as well as to speaker) is mastered (Maratsos, 1974). Thus, the aspect of the meaning of the investigated in the present study, one very much related to communication factors, is mastered at least as early as the literal meaning. Further research on the relation of these two aspects might provide considerable illumination on the relation of what are often called the pragmatic and literal aspects of language.

The failure of negative polarity in general ("didn't you see a ...?") to elicit yes responses, and the elimination of the effect of the in negative questions ("didn't you see the . . . ?") are difficult to interpret.

The results shown in Table 4 illustrate a complex interaction between quantifier and polarity (affirmation-negation). These results are very similar to those of Livant (n.d.), who simply asked adults to judge whether a speaker expected a yes or no response to questions which were similar to those of the present study. Livant found that "negation and stress amplify the yes expectation for some and the no expectation for any.". The failure of "didn't you see any . . .?" to elicit yes responses may be because it is open to two interpretations, as Livant points out. In one interpretation, the speaker expects the hearer to have seen the entities named, and hence to answer yes. However, in another interpretation, the question can be interpreted as an expression of surprise by the speaker in response to a report by the hearer that the hearer did not see the entities named. "The question now appears as a way of making sure the hearer's report was correct . . . In this interpreation, the speaker expects no." (Livant, p. 13).

In the present experiment, no attempt was made to control the intonation pattern of the questions. The interviewers simply kept their speech as natural as possible. A hypothesis for future investigation is whether the effect of questions is due more to the actual words or to the associated intonation patterns. Young children are very sensitive to non-verbal aspects of vocal communication; in some cases, when non-verbal and verbal aspects conflict, the child responds more to the non-verbal.

A final issue concerns the mechanism by which question type influences memory report. Two broad classes of models can be distinguished. In the first, the form of the question actually modifies the memory. According to this view, humans are constantly integrating the information they receive about an event. The trace resulting from the film is combined with the information, derived from the form of the question, that the speaker believes that the entity was indeed present, to produce a stronger memory of the entity. A second class of model does not postulate a change in memory, but rather a change in the process of retrieval. Essentially a signal detection model, it claims that memory traces are continuous, rather than discrete, and that individuals can change the criterion for a yes response. In most studies, it is not possible to distinguish the two. There are a few cases, however, where the distinction can be made. In the Loftus and Palmer experiment, a change in the verb from hit to smash not only affected the subject's estimate of the speed of the cars, but also affected the probability of reporting broken glass one week later, even though nothing was said about broken glass at the first session, nor were the verbs hit or smash used at the second session. Here there is some evidence for a change in memory for the total event. If the free recall data of the present study had produced more examples of items being "recalled" which were in fact not present, some support could be inferred for the memory change model. However, the infrequency of such responses, and their failure to be correlated to specific question types, makes this interpretation untenable on the present evidence. In the Loftus and Zanni study, a major effect of the change in articles was on the frequency of "don't know" responses, suggesting a change in criterion. However, children hardly ever produce a "don't know" response. Thus, the present study must be considered ambiguous on this question.

One goal of the present research, and research which stems from it, is to identify forms of questions which are not misleading. For example, "did you see a . . .?" appears on the basis of the present evidence, to be the form of question most likely to produce a correct response, e.g., no for false questions. On the other hand, the response of the legal profession to evidence and opinion regarding the testimony of children has been unusual. In a recent Supreme Court Reporter (1973), it is recognized that "the suggestive powers of the leading question are as a general proposition undesirable. However, numerous exceptions have achieved recognition: the witness who is hostile, unwilling, or biased; the child witness . . ." (p. 88). In other words, the witness who might be most easily misled by suggestive questions is one of whom those questions may be asked.

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